at present to enter into details; all that I now wish to communicate is the result at which I have arrived; and in a short time I hope to have the pleasure of publishing, at length, my observations in connexion with this interesting subject.

The excavating instrument of *Pholas* and *Teredo* is formed of the anterior portion of the animal, in the surface of which are imbedded siliceous particles. The particles penetrating the skin give to it much the character of rasping-paper. The whole forms a rubbing surface, which being applied closely to the bottom of the cavity by the adhesion of the foot, enables the animal to rub down, and so penetrate, shale, chalk, wood, or even the hardest limestones and marble.

Saxicava rugosa is also furnished with a rasping surface covered with siliceous particles. This surface, however, in this species is formed entirely of the anterior portion of the mantle, the margins of which being united are much thickened, forming a sort of cushion capable of considerable protrusion at the will of the animal. The foot is small, and passing through a much-constricted orifice, gives origin to a byssus, which anchors the shell close to the base of the excavation, and thus holds the rubbing apparatus in immediate contact with the part to be excavated.

XVII.—*On a new species of* Platycercus. By John Gould, F.R.S. &c.

Dear Sir, 20 Broad Street, Golden Square, Jan. 11, 1845.

My collector, Mr. Gilbert, has lately sent me the description of a new *Platycercus* discovered on the Darling Downs at the back of Moreton Bay, on the east coast of Australia, and which he states far surpasses in beauty every other species of the genus yet discovered. I have therefore thought it of sufficient importance to the ornithologist to send you a copy for insertion in the 'Annals of Natural History.'

Band across the forehead half an inch in breadth, scarlet, fading around the eyes, lores and cheeks into pale lemon-yellow, which again gradually blends with the green of the under surface; crown of the head and nape blackish brown; sides of the neck to the shoulders verdigris-green with yellowish reflexions; back grayish brown; rump and upper tail-coverts verditer-blue, the longer coverts with a band of black at their extreme tip; primaries and secondaries black edged with bluish green; shoulders with a spot of rich vermilion; under wing-coverts and edges of the pinions verditer-blue; two middle tail-feathers olive-brown at the base, gradually passing into greenish blue at the tip with olive reflexions; the three outer feathers on each side with a narrow zig-

zag band of black at about half their length from the base, then greenish blue to the tip, the inner webs fading into white near the extremity; throat and chest yellowish emerald-green, each feather tipped with verditer-blue; middle of the breast and the sides verditer-blue; abdomen and under tail-coverts scarlet; irides dark brown; bill horn-colour, becoming blackish gray at the base; legs and feet yellowish brown.

Length about 12 inches; bill $\frac{1}{2}$; wing $5\frac{1}{4}$; tail $7\frac{1}{2}$; tarsi $\frac{5}{8}$.

Nearly allied to *Platycercus hæmatogaster*. In habits it is a truly grass-feeding parrakeet.

For this beautiful species I propose the name of *Platycercus pulcherrimus*,

And remain, dear Sir, yours truly,

To R. Taylor, Esq. JOHN GOULD.

XVIII.—*On the Means by which various Animals walk on the Vertical Surfaces of highly polished Bodies.* By JOHN BLACKWALL, F.L.S.

PERCEIVING among eminent naturalists and physiologists in this country not only a disinclination to adopt the explanation of the means by which animals of various species ascend the vertical surfaces of highly polished bodies, published in the 'Transactions of the Linnæan Society,' vol. xvi. pp. 487, 767, but also a disposition to adhere to the old and exploded view of the subject, which has been recently introduced into important works on zoology and physico-theology, in the course of last autumn I made several experiments bearing directly upon the remarkable phænomenon under consideration, the particulars of which I shall proceed to state.

Having captured vigorous specimens of the following insects and spiders, *Coccinella vigintiduo-punctata*; the common earwig, *Forficula auricularia*; the hive-bee, *Apis mellifica*; the common wasp, *Vespa vulgaris*; the house-fly, *Musca domestica*; the large flesh-fly, *Musca vomitoria*, *Philodromus dispar*, and *Drassus sericeus*; and having ascertained that they could walk with facility upon the perpendicular sides of a well-cleaned glass-jar, I put into a perfectly dry and clean phial a sufficient quantity of nitrate of silver in a very finely pulverized state to cover the bottom of it to the depth of about one-twelfth of an inch; then holding the phial at various degrees of inclination to the plane of the horizon and turning it round, I distributed in this manner many of the finer particles of the caustic over the whole of its inner surface. Into the phial thus prepared I introduced, in succession, the insects and spiders named above, taking care to renew the nitrate